

What is claimed is:

1. A hearing aid system comprising:
a hearing aid case configured to be worn behind the ear of a user, the case containing a microphone, a processor unit, and a speaker for delivering amplified sounds to an output connector of the case;
a tube having a first end for attaching to the output connector of the case and a second end, the tube having a preformed shape including a first bend extending from the case over the top of the ear of the user and a second bend extending from an outside of the ear into an ear canal of the user; and
an eartip connected to the second end of the tube and configured to fit within the ear canal while allowing sounds outside and within the ear to pass through the ear canal around the eartip.
2. The hearing aid system according to Claim 1, wherein the tube has a rigidity sufficient to hold the ear canal eartip in the ear canal and the case behind the ear.
3. The hearing aid system according to Claim 1, wherein the first bend is located substantially in a first plane and the second bend is located substantially in a second plane which is approximately perpendicular to the first plane.
4. The hearing aid system according to Claim 1, wherein the tube is formed of a material having a durometer of about 65 to 85 Shore D.
5. The hearing aid system according to Claim 1, wherein the tube has an inner diameter of about 0.9 mm or less and an outer diameter of about 1.6 mm or less.

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6. The hearing aid system according to Claim 1, wherein the hearing aid case including a battery has a weight of 1.5 grams or less.

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7. The hearing aid system according to claim 1, wherein the case includes a tube attachment end for connecting the case to the tube for delivering amplified sounds from the speaker to the ear canal of the user, the tube attachment end including:

5 an end surface for abutting the first end of the tube;

6 a nipple extending from the end surface and configured to be received
7 in the end of the tube, the nipple having a longitudinal axis;

8 a side surface for abutting a side surface of the tube;

9 a key extending along the side surface in a direction substantially
10 parallel to the longitudinal axis of the nipple, the key arranged to maintain a proper
11 orientation between the case and the tube when the tube is connected to the case.

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1 11. The hearing aid tubing according to Claim 10, wherein the tube has
2 been formed at high temperature to retain the first and second bends.

3 12. The hearing aid tubing according to Claim 10, wherein the tube is
4 sufficiently rigid that a 1 inch (2.54 cm) segment of tube is not deflected 0.1 inch
5 (2.54 mm) by a force of 1 gram or less.

6 13. A hearing aid case comprising:
7 a case body configured to be worn behind the ear of a user, the case
8 body containing a microphone, a processor unit, and a speaker;
9 a battery compartment within the case; and
10 a tube attachment end for connecting the case body to a hearing aid
11 tube for delivering amplified sounds from the speaker to an ear canal of the user, the
12 tube attachment end including:
13 an end surface for abutting an end of the hearing aid tube;
14 a nipple extending from the end surface and configured to be
15 received in the end of the hearing aid tube, the nipple having a longitudinal axis;
16 a side surface for abutting a side surface of the hearing aid tube;
 and
 a key extending along the side surface in a direction
 substantially parallel to the longitudinal axis of the nipple, the key arranged to
 maintain a proper orientation between the case body and the hearing aid tube when the
 hearing aid tube is connected to the case body.

 14. The hearing aid case according to Claim 13, wherein the nipple
 includes a circumferential ring for retaining the hearing aid tube in a snap fit.

1 15. The hearing aid case according to Claim 14, wherein the key is a
2 substantially rectangular ridge extending along the side surface.

1 16. The hearing aid case according to Claim 13, wherein the end surface is
2 substantially perpendicular to side surface.

1 17. A kit of parts for assembling hearing aids comprising:
2 a plurality of tubes each having a preformed shape including a hook for
3 extending from a hearing aid case over a top of an ear of a user, a run extending from
4 the top of the ear to the ear canal, and an ear canal end extending into the ear canal of
5 the user, wherein the plurality of tubes differ in a length of the run or a length of the
6 ear canal end;

7 a plurality eartips for connection to the ear canal end of the tubes and
8 configured to fit within the ear canal while allowing sound to pass through the ear
9 canal around the eartip; and

10 a plurality of behind the ear hearing aid cases including different sound
11 processing components, the cases having a connection end for connection to the tubes.

1 18. The kit of parts according to Claim 17, wherein the plurality of ear
2 canal eartips include at least one of bud-shaped eartips, flower-shaped eartips,
3 webbed-shaped eartips, guppie-shaped eartips, barb-shaped eartips, and dome-shaped
4 eartips.

1 19. The kit of parts according to Claim 17, wherein the plurality of ear
2 canal eartips are provided in different sizes.

1 20. A kit of parts for a behind the ear hearing aid comprising:
2 a hearing aid housing containing amplification components;

3 an eartip configured to fit within an ear canal of a user while allowing
4 sound to pass through the ear canal around the eartip;

5 a hearing aid tube having a first end configured to be connected to the
6 hearing aid housing and a second end configured to be inserted into the eartip; and

7 an inserting tool for inserting the second end of the hearing aid tube
8 into the ear canal eartip, the inserting tool including an elongated holder with an
9 elongated recess configured to received a portion of the hearing aid tube adjacent to
10 the second end.

1 21. A hearing aid device comprising:
2 an eartip adapted to be inserted into a human ear canal and to engage an
3 anatomical structure of the canal; and

4 a tube having a first end adapted to be connected to a source of sound
5 and a second end adapted to be connected to the eartip, the tube shaped to have a
6 portion which engages the ear and a portion which extends into the ear canal, and the
7 tube having sufficiently rigidity to position and hold the eartip in the ear canal when
8 the tube is engaged with the ear.

1 22. The hearing aid device according to Claim 21, wherein the eartip has a
2 flower-shape with a plurality of petals extending from a central core configured so
3 that the petals fit around the first bend of the ear canal.

1 23. The hearing aid device according to Claim 21, wherein the eartip
2 includes a single blade extending from a central core configured so that the blade fits
3 behind the ear tragus.

1 24. The hearing aid device according to Claim 21, wherein the eartip is a
2 conically-shaped member having first cross sectional dimension at a first end which is

3 connected to the tube and a second cross sectional dimension which is larger than the
4 first dimension at a second free end.

25. The hearing aid device according to Claim 21, wherein the eartip is a dome-shaped member having an annular skirt extending from a central core.

26. The hearing aid device according to Claim 25, wherein the dome-shaped eartip has a plurality of vent holes.

27. The hearing aid device according to Claim 21, further comprising a behind the ear hearing aid case attached to the first end of the tube for providing the source of sound.

28. The hearing aid device according to Claim 27, wherein a portion of the tube between the hearing aid case and the eartip extends over the ear of the user and supports the hearing aid case behind the ear.

29. The hearing aid device according to Claim 21, wherein the eartip includes a wax guard.